

AHLSTAR WPP pump provides flexibility in design to meet customer requirements

Fluorine salts production is a part of the phosphoric fertilizer process. The manufacturing process has two steps of absorption – an important part of the process. The pumped liquid is very difficult – it is both corrosive and abrasive. The temperature is high, too, and some cavitation is also present. The solids amount is high. The particles are fine, but they are very abrasive. The solids are partly SiO_2 . So, a combination of many factors is present.



The challenge

Originally the customer had a locally made pump with a short lifetime (about three months). The target was to get a longer lifetime of the wetted parts (one year) at a reasonable price. The application is complex, so the final solution came after three trials.

The solution

At first, Sulzer selected the AHLSTAR WPP wear resistant pump with open impeller in 4U material and with a dynamic seal. The pump operated for about a year after which it was worn out heavily with extensive abrasion discovered. After examining the affected surfaces of the wetted parts, we decided to try the 4L material in order to get a lower cost of the pump. About the same lifetime was achieved. Finally the longest lifetime was achieved by using the EH (hardened 4L) material (300 HB hardness).

Customer benefit

In this case the best possible combination of pump type and pump material was found after several trials. As a result, an optimum solution between the price and lifetime was found. More pumps were ordered for the same application.

The Sulzer difference

We are committed to supporting our customers' competitiveness and profitability. We have a proven track record of design innovations creating reliable, safe and energy-efficient products. Combined with a professional approach, this brings positive results.

Pump data

AHLSTAR WPP44-150	open impeller, dynamic seal
Original serial number	100008720
Later delivered serial number	100098624
Material	EH (4L HB300)
Capacity	90 l/s
Head	45 m

Process data

Fluoric ammonium NH4F	up to 700 g/l
Temperature	90°C
Solids	450 g/l
Solids size	20-40 mkm
Density	1'400 g/l

For any inquiries please contact

info_fmcp@sulzer.com

sulzer.com

A10079 en 2.2025, Copyright © Sulzer Ltd 2025

This case study is a general product presentation. It does not provide a warranty or guarantee of any kind. Please contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.